

SMITHSONIAN MISCELLANEOUS COLLECTIONS

VOLUME 61, NUMBER 13

NEW ANTELOPES AND CARNIVORES
FROM BRITISH EAST AFRICA

BY

EDMUND HELLER

Naturalist, Smithsonian African Expedition



(PUBLICATION 2240)

CITY OF WASHINGTON
PUBLISHED BY THE SMITHSONIAN INSTITUTION
SEPTEMBER 16, 1913

The Lord Baltimore Press
BALTIMORE, MD., U. S. A.

NEW ANTELOPES AND CARNIVORES FROM BRITISH
EAST AFRICA

BY EDMUND HELLER

NATURALIST, SMITHSONIAN AFRICAN EXPEDITION

Further study of the collections of African mammals in the United States National Museum, secured by expeditions under the direction of Col. Theodore Roosevelt, Paul J. Rainey, and Dr. W. L. Abbott, has resulted in the discovery of the new races described in the present paper.

TRAGELAPHUS SCRIPTUS OLIVACEUS, new subspecies

Swahili Bushbuck

Type from Maji-ya-Chumvi, British East Africa; adult male, Cat. No. 182267, U. S. Nat. Mus.; collected by Edmund Heller, Dec. 11, 1911. (Original No. 2580.)

Characters.—Dorsal coloration of male grayish-olive without any rufous suffusion; sides and hindquarters marked by white spots; legs seal-brown; neck short-haired without evident collar; dorsal mane white. Female cinnamon, the sides of the body crossed by 6 to 8 white transverse bars; white spots on lower sides and on hind quarters. Skull with enlarged bullae. Body size smaller than *Tragelaphus scriptus delamerei* of the Kenia highlands.

Coloration of adult male (type).—Body grayish-olive sparingly lined by buffy, midline of back with a crest of longer white tipped hair; middle of body crossed by an indistinct white bar; lower sides with a line of irregular white spots; hindquarters spotted by several conspicuous white spots. Breast dark seal-brown without the olive tinge of the back; belly white. Forelegs seal-brown with a white bar on inside of thighs; another back of knee and a white spot on inside from knee to pasterns; front of pasterns marked by two large white spots. Hind legs with a white spot behind the hock and a broad white stripe on inside of leg from the hock to the pasterns, the latter with two large white spots in front as in the forelegs. Tail bushy, the hair above and on sides olive-brown with a narrow streak of white on underside; hair at tip indistinctly blackish; neck.

hair brown without a definite collar, short haired to the white bar on lower throat where the long olive hair of body begins abruptly; upper throat with a large median white spot. Crown of head and snout olive-brown, the latter without white chevrons; sides of head ochraceous-tawny; cheeks below eye marked by two large white spots; upper lips, chin and forethroat white; back of ears olive-brown, the tips becoming seal-brown, inside and base whitish. The adult female has the sides of the body bright ochraceous-tawny with the median area much darker, cinnamon-brown through the center of which extends a thin white dorsal mane from withers to tail; sides of body marked with 6 or 7 transverse white stripes, the anterior ones being the longest; lower sides with a line of white spots and hindquarters with about a dozen similar spots irregularly arranged. Breast buffy lighter than the sides; belly white. Legs bright-tawny with white areas arranged as in the male. Tail showing much more white below than that of the male, only the median dorsal line being cinnamon like the body color. Collar on neck more distinctly marked than in the male. Crown of head bright rufous, the snout dorsally olive-brown with narrow white chevrons from eye to snout, rest of head colored as in the male.

Measurements in the flesh.—Head and body, 1120; tail, 200; hindfoot, 365; ear, 142. Skull adult but not aged, the first premolar only showing wear; condylo-basal length, 228; greatest breadth, 95; length of upper tooth row, 66; gnathion to tooth row, 66; length of bullæ, 37; height of bullæ above basioccipital, 13; nasals, 80 x 20; length of premaxillæ, 57. Length of horns on curve of keel, 12 inches.

The race here described inhabits the edge of the Taru Desert and the moist coast strip from Kilimanjaro northward at least as far as the Tana River. It is a decidedly lighter colored race than either *massaiicus* or *delamerei* and is readily distinguishable by its lack of any rufous coloration in the male.

AMMELAPHUS IMBERBIS AUSTRALIS, new subspecies
East African Lesser Kudu

Type from Longaya water, Marsabit district, British East Africa; adult female, Cat. No. 182073, U. S. Nat. Mus.; collected by Marius A. Johnston, July 21, 1911. (Original No. 2380.)

Characters.—Resembling *Ammelaphus imberbis* of Somaliland closely but differing by darker coloration, absence of the white spot on front of pasterns on the forelegs and shorter horns.

Coloration.—Dorsal color bright ochraceous-tawny lined sparingly with black along median region; vertebral line marked by an ill-defined white and black dorsal stripe; sides crossed by twelve conspicuous transverse stripes from the dorsal stripe to the underparts; lower sides and breast ochraceous, the midline of chest marked by a broad black stripe but the belly and groins pure white. Forelegs pure ochraceous without the white spot on front of pasterns; band above hoofs and back of pasterns black; a black band on back of leg just above the knee. Hindlegs ochraceous with a white spot on front of pasterns and a black band above hoofs and back of pasterns black; a white stripe on inside of leg from the white of the belly to the hock. Tail tawny above, white below, with tip seal-brown. Neck somewhat lighter than the body, ecru-drab with a narrow black stripe on nape from head to withers; a white patch on forethroat and a larger oval one near base. Crown of head tawny banded in front by white chevron bars from the eyes to the snout; median line of snout walnut-brown; sides of head ecru-drab with two white spots below eye and a short white postocular stripe; lips and chin white, the white on forethroat bordered by dusky; back of ears ochraceous, the tip narrowly margined by blackish; inside and base white.

Measurements in the flesh.—Head and body along curve, 1490; tail, 360; hindfoot, 470; ear, 206. Skull aged, the premolars much worn. Greatest length, 300; condylo-basal length, 285; greatest breadth, 110; orbit to gnathion, 165; gnathion to tooth row, 80; length of upper tooth row, 87; width of palate at M^1 , 72; length of premaxillæ, 85; nasals, 115 x 31; vertical diameter of orbit, 45.

Another female from the same locality is in the collection. It agrees with the type minutely in coloration. Specimens of the lesser kudu from Somaliland in the Field Museum of Chicago are lighter colored and have the white spot in front of the pasterns well marked. No males are in the National Museum however for comparison.

STREPSICEROS STREPSICEROS BEA, new subspecies

East African Greater Kudu

Type from Donyo Gelsha on the escarpment east of Lake Baringo; adult female, Cat. No. 163247. U. S. Nat. Mus.; shot by Kermite Roosevelt October 10, 1909. (Original No. 410.)

Characters.—Similar to the Abyssinian race *Strepsiceros strepsiceros chora* in the reduced number of body stripes, but decidedly darker in color on median dorsal region, ear tips and bands on pasterns; pelage longer with the white stripes more distinctly marked.

Brighter colored than the typical race from South Africa with the stripes much more conspicuous although less in number.

Coloration.—Body ochraceous-tawny, the median dorsal region seal-brown, with a white stripe following vertebral column from withers to rump; sides marked by eight transverse white bands on the right side and six on the left which extend from the median dorsal stripe to the ventral surface or lower sides; underparts ochraceous with a broad blackish stripe medially on breast: groins and inside of legs whitish: front of legs ochraceous; band above hoofs and back of pasterns black, front of pasterns with a large blotch of whitish; tail tawny-ochraceous like the body; tip darker walnut-brown, below white. Neck drab-gray, the nape with a thin mane of long dusky brown hair, the mane wanting along the basal part of neck but reappearing again on the withers. Crown of head walnut-brown, crossed on the snout by a wide diagonal white band from the eye, which meets its fellow on the snout; sides of face ecru-drab, two indistinct white spots below the eye; lips and chin white; back of ears hair brown, the terminal one-half seal-brown, inside and base whitish.

No flesh measurements are available of specimens from British East Africa. An adult male was shot at the same locality by Kermit Roosevelt, but as this specimen is now mounted the female was selected as the type. In the male the hair is thinner and the transverse light stripes are less distinct. The much more distinct striping and longer hair of this race are very evident on comparison with the three specimens from South Africa in the National Museum and the group from Somaliland in the Field Museum of Chicago.

The skull of the female compared to skulls from South Africa has a much narrower basisphenoid area below the bullæ which are very large; tooth row longer; interorbital region much flatter; nasal processes of premaxillæ much more slender; lachrymal-nasal sinus larger; terminal notches in nasal bones short. Skull of type old, the first premolar worn down below the fossette.

Greatest length of skull, 380; condylo-basal length, 960; greatest breadth, 150; gnathion to orbit, 203; diameter of orbit, 55; length of upper tooth row, 110; gnathion to tooth row, 102; nasals, 140 x 37; width of palate across M^1 , 95; width of basisphenoid between bullæ, 21; height of bullæ above sphenoid, 30; length of premaxillæ, 100; nasal notch, 18.

The kudu found near Baringo are confined to a few square miles of country among rocky hills and are widely separated from any

other group. One hundred miles north near the south shore of Lake Rudolf are a few others, while to the south the nearest ones occur on the German border near the Southern Guaso Nyiro River. Wide breaks of this sort, however, are characteristic of the distribution of the greater kudu owing to the isolated nature of the hilly and rocky country which they select as their haunts.

KOBUS DEFASSA RAINEYI, new subspecies

Rainey Defassa Waterbuck

Type from the Amala River, British East Africa; adult male, Cat. No. 181961, U. S. Nat. Mus.; shot by Paul J. Rainey, May 14, 1911. (Original No. 2203.)

Characters.—A large race exceeding in body size that of any other in British East Africa. Coloration nearest *Kobus defassa tjaderi* of Laikipia but differing by the more reddish body coloration and more restricted black snout patch which ends in front of the interorbital region. Distinguishable from *Kobus defassa nzoiae* by larger body size, narrower skull and absence of rufous on the nape.

Coloration.—Body cinnamon-drab in effect, the color made up of a mixture of cinnamon hair with black tips interspersed sparingly with white hairs, the black tone due to the black tipped hairs gives a dark cast to the whole coloration; back darkest, sides lighter and more grayish; breast fuscous-brown without cinnamon vermiculation; belly and posterior surface of hindquarters white, the latter in sharp contrast to the dark back and sides. Tail darker than back, seal-brown without cinnamon mixture, a narrow streak on under side whitish to within a few inches of the tip. Legs from knees and hock uniform dark seal-brown with a fringe of whitish hair about hoofs and false hoofs. Neck slightly lighter than the body, the sides and throat grayish with a white patch on forethroat and with the nape decidedly cinnamon. Forehead uniform rufous from horn bases to front of eyes; ridge of snout to muzzle black or seal-brown variegated by a few scattered white hairs; tip of snout bordering muzzle, upper lips and chin white; sides of snout tawny lined by black; a broad white stripe above eye from the middle to an inch in front of angle on sides of snout. Cheeks below eye grayish like sides of neck. Back of ears cinnamon, gradually growing darker toward tip where they are broadly seal-brown on both sides; inside except extreme tip white.

Measurements in the flesh.—Tail, 410; hindfoot, 510; ear, 210. Skull, condylo-basal length, 390; greatest breadth, 155; nasals, 152

× 48; orbit to gnathion, 242; length of upper tooth row, 110; vertical diameter of orbit, 50; PM¹ to gnathion, 123; length of premaxillæ, 110; length of anterior nares, 83; width of palate across M¹, 97; width between bullæ, 35. Skull old, the last molar showing considerable wear and the suture between basioccipital and basisphenoid fully ankylosed. Skull distinguishable from *nsoiae* by its narrowness of palate, long tooth row and narrowness of basioccipital between the tympanic bullæ.

Four specimens are in the collection from the headwaters of the Amala River near the German border of British East Africa. These agree with the type in coloration of body and large size of skull.

KOBUS ELLIPSIPRYMNUS KURU, new subspecies

Swahili Waterbuck

Type from Taveta, Kilimanjaro district, British East Africa; immature male, Cat. No. $\frac{18950}{34694}$, U. S. Nat. Mus.; collected by Dr. W. L. Abbott.

Characters.—Mostly closely allied to *Kobus ellipsiprymnus thika* of the Athi Plains, but differing from this race by its darker, sepia-brown color; legs darker brown but snout not darker than body color and showing little contrast to the color of the forehead.

Coloration.—Median dorsal region uniform dark brown, warm sepia of Ridgway; sides lighter, deep brownish drab in color; breast drab, the belly whitish. White stripe on hindquarters not continuous across rump; broad and distinct on sides however. Tail sepia like back, the tip very little darker; a narrow line of white on underside. Legs from knees and hocks uniform sepia-brown, darker than the sides; a white fringe above hoofs and false hoofs. Neck somewhat lighter than the body, dark brownish-drab; nape uniform in color with the throat; a whitish blotch on upper throat. Sides of head like the neck in color, dorsal surface of snout sepia-brown but not contrasting with the more reddish cinnamon-brown forehead; rhinarium of snout bordered by a white band; lips and chin white; a broad white area at front angle of eye about two inches long. Area about eyes and back of ears ochraceous-tawny; tips of ears sepia-brown, inside white.

No flesh measurements of the type are available and the skull is also missing at present. The skull is recorded, however, by Doctor True, who gives the horn length as ten inches. A skin with horns this length is in the collection from Juja Farm, which is within a few miles

of the type locality of *thikæ*. The Juja Farm skin is much lighter than the type but agrees well in color with adults from Juja Farm. Several skins from Juja Farm and the Northern Guaso Nyiro are in the National Museum and all are conspicuously lighter than the Taveta skin. A mounted specimen, an older male but still somewhat immature, from Taveta is in the Museum. The horns of this specimen are 19 inches in length. The coloration is much lighter than that of the type owing to its exposure to light for a long period, approximately twenty years. It is surprising how little individual variation in color is shown in a series of *thikæ* from Juja Farm near Nairobi. Specimens from the Northern Guaso Nyiro and from Mtoto Andei agree with these in tone of coloration. The dimensions of the adult skull No. 39693 from Taveta are: condylo-basal length, 350; greatest breadth, 156; nasals 143 x 41; diameter of orbit, 50; orbit to gnathion, 220; length of premaxillæ, 116; upper tooth row, 109; PM¹ to gnathion, 107; width of palate across M¹, 85; age, last milk molar still in use, and last molar just erupted.

Among the Swahili tribes of the coast district the waterbuck is known as *kuru*.

OREOTRAGUS OREOTRAGUS AUREUS, new subspecies

Marsabit Klipspringer

Type from the summit of Mt. Lololokwi, north of the Northern Guaso Nyiro; adult female, Cat. No. 182149, U. S. Nat. Mus.; collected by Edmund Heller, Sept. 15, 1911. (Original No. 2458.)

Characters.—Female lacking horns as in *Oreotragus oreotragus saltatrixoides* of the Abyssinian highlands, but body color lighter than that race, golden yellow; legs much lighter than body color, dark spot above hoof large; crown of head different in color from body, rufous. Differs from *Oreotragus oreotragus schillingsi* by the absence of horns in the female, the light colored legs, the presence of a dark spot above the hoofs and by lighter and more yellowish coloration.

Coloration of the type.—Dorsal color bright buff-yellow everywhere speckled by seal-brown owing to the basal color of the hair showing beneath the narrow yellow tips of the hair, yellow purest on neck; midline of back showing most blackish; rump uniform in color with the back; sides sharply defined against the pure white of the underparts. Tail rudimentary and not differentiated by color or longer hair from the rump. Forelegs lighter colored than the back, buffy with less of the dark hair bases showing through on out-

side, the inside uniform whitish like the underparts; a heavy black band about the hoofs which reaches halfway to the false hoofs. Hindlegs like the fore but the inside from hocks to hoof uniform in color with the outside. Crown of head russet lined heavily by black; snout on the sides buffy like the legs, the median portion blackish; lips and chin whitish; midline of throat buff-yellow without darker vermiculations. Back of ears clothed by short buffy hairs, central portion and margin blackish, except on lower inner border, which is marked by a white bar or spot; inside and base whitish.

Measurements in the flesh.—Head and body, 830; tail, 75; hind-foot, 225; ear, 93. Skull, condylo-basal length, 130; greatest breadth, 76; nasals, 41 x 22; gnathion to orbit, 66; vertical diameter of orbit, 29; length of premaxillæ, 35; upper tooth row, 52; gnathion to PM¹, 29; width of palate across M³, 48; post orbital constriction, 48. Skull old, the premolars much worn and the sphenoidal sutures obliterated by ankylosis. Premaxillæ at tips slender, not broadly club-shaped as *schillingsi*.

Six specimens of this race from the Rainey Expedition are in the National Museum. Five of these are females, all of which are without horns or any evidence of horn cores on the skulls. One is a male with well developed horns. From Lololokwi, the type locality, there are two females; one specimen from the middle course of the Guaso Nyiro and three others from the rock kopjes of the northern edge of the West Kenia Plateau. These specimens agree closely in color with the type. The range of this species meets that of *schillingsi*, a race in which the females have as well developed horns as the males, in the region about Lake Baringo. To the eastward the southern limit of the range is no doubt marked by the Tana River. Along the frontiers of the two races there is no indication in specimens of a transition from the hornless to the horned females. All of the female specimens of *schillingsi* examined are well horned, the longest horned specimen of the race being that of a female. The coloration of this race, however, shows no striking color differences with the others in which the females are hornless. The horned character of the females, which is the chief character of the race, was not known to the describer, Herr Oscar Neumann. His specimens had not been sexed in the field by the collectors and the skins were cut in such a way that no evidence of sex remained. His specimens, however, were all horned and on this account they were classed as males.

PROTELES CRISTATUS TERMES, new subspecies

Masailand Aard Wolf

Type from the headwaters of the Amala River west of the Loita Plains, British East Africa; adult female, Cat. No. 181523, N. S. Nat. Mus.; collected by Edmund Heller, May 8, 1911. (Original No. 2154.)

Characters.—Intermediate in coloration between typical *Proteles cristatus* of South Africa and *Proteles cristatus septentrionalis* of Somaliland. Interorbital region black haired, crown of head grizzled, feet black, and ears blackish as in *cristatus*; body stripes narrow; ground color of body grayish fulvous; tail only black on terminal third as in *septentrionalis*; muzzle and chin black; throat grayish-buffy with fulvous suffusion.

Measurements in the flesh.—Head and body, 680; tail 310; hind-foot, 142; ear, 97. Skull adult but sutures open. Condyllo-basal length, 136; basilar length, 125; zygomatic breadth, 75; breadth of brain case, 46; interorbital width, 26; post orbital width, 33; length of upper tooth row, 40; breadth at canines, 34; nasals, 42 x 11; condyllo-basal length of mandible, 96.

Besides the type there are two other specimens in the National Museum collection from British East Africa. One of these is from the same locality as the type and the other is from the Northern Guaso Nyiro River from the vicinity of Neumann's boma. This latter specimen is much more fulvous than those from the higher plateau of the Loita. In its lack of grayish coloration and suppression of the black areas this form approaches the Somaliland race. The stomach of the type was crammed by a mass of termites upon which the animal had been feeding.

NANDINIA BINOTATA ARBOREA, new subspecies

Kavirondo Nandinia

Type from the Lukosa River, northeast of Kisumu, British East Africa; adult male, No. 182374; U. S. Nat. Mus.; collected by Edmund Heller, Feb. 11, 1912. (Original No. 2695.)

Characters.—Differs decidedly from *Nandinia binotata binotata* of West Africa by the much narrower black rings on the tail, the narrower black neck stripes and absence of spots on the lower sides of the body. It approaches more closely the coloration of *gerrardi* of Nyasaland with which it agrees in the narrowness of the tail rings, but is at once distinguishable by the presence of the three black stripes on the nape and the larger and more conspicuous spots on the dorsal surface.

The flesh measurements are: Head and body, 550; tail, 625; hind-foot, 95; ear, 38. Skull fully adult with high sagittal and lambdoidal crests, but basisphenoid and parietal sutures still evident. Condylo-basal length, 106; basal length, 100; zygomatic breadth, 63; interorbital breadth, 20; post interorbital constriction, 16; nasals, 27 x 10; palatal length, 47; mastoid breadth, 42; upper tooth row, 44; length of PM^1 on outer side, 8.2.

Three specimens, male, female and young, are in the National Museum, collected by the Rainey Expedition in the Kakumega forest northeast of Kisumu. The adult male has been selected as the type. The female is somewhat lighter in general tone of coloration. The half-grown young specimen is much more grayish than the adults and lacks the tawny suffusion. The two light spots on shoulders are much better marked, however, in the young. The dark rings in the tail of the adults are best marked on the median dorsal line, and are broken or absent on the underside. The terminal one-third of the tail is without any indication of the dark cross bars, the hairs of which are uniformly black tipped. The specimens have been compared with the material in the British Museum and also with a series of flat skins of *binotata* in the National Museum from Kasai, Congo drainage.

The genus *Nandinia* has not previously been reported from British East Africa, the specimen from Ruwenzori recorded by Thomas being the most eastern record.

MUNGOS DENTIFER, new species

Type from Maji-ya-Chumvi, British East Africa; adult female, Cat. No. 182732, U. S. Nat. Mus.; collected by Edmund Heller, Dec. 14, 1911. (Original No. 4865.)

Characters.—A small species similar to *Mungos ochraceus*, but size less and hair annulated; color similar to *Mungos zombae*, but much more annulated; skull similar to *Mungos lasti*, but much smaller, with more inflated brain case; mandible with first premolar present as in *Mungos lasti*, this character separating these two species from all their allies.

Coloration.—General dorsal color grizzled buffy and blackish, except the median dorsal area which is mars-brown, due to the color of the underfur predominating by the wearing off of the tips of the longer annulated hairs; tip of the tail with a subterminal band of rufous followed by a black tip, the rufous spreading on underside halfway to base; feet like back in color; underparts without the blackish vermiculation, the color more uniform tawny-olive.

Measurements.—Head and body, 270; tail, 205; hindfoot, 45; ear, 23. Skull, condylo-basal length, 54; zygomatic breadth, 28; postorbital constriction, 10; palate breadth across PM⁴, 18.5; length of upper tooth row to front of canine, 20; length upper carnasial, 6; condylo-incisive length of mandible, 34.5; length at coronoid process, 12; length of tooth row to front of PM₂, 17.5.

The type is an old adult, all of the skull sutures having disappeared, but the teeth show very little wear. Another specimen from the same locality is in the collection. It is immature, the sutures of the skull still being open and the milk canines are just being pushed out of place by the permanent ones. The color of this specimen is less grizzled, the black annulations being very narrow, the feet are almost uniform ochraceous-buff and the subterminal rufous area of the tail is much greater. The specimen is a male and is somewhat larger than the type. The mandible shows the first small premolars like the type. The three skulls of *lasti* from Zanzibar in the British Museum all have these first lower premolars, but they are lacking in all the other races of small mongooses. The Zanzibar species does not otherwise closely resemble this coast form. It differs widely by its uniform dark rich brown color, larger size, longer tail and skull with a much less inflated brain case. This new species is much nearer *zombæ* in size, proportions and coloration but is decidedly more grizzled, smaller in size and possesses an additional lower premolar.

MUNGOS ALBICAUDUS FEROX, new subspecies

Type from Changamwe, British East Africa; adult female, Cat. No. 163294, U. S. Nat. Mus.; collected by Dr. E. A. Mearns, Nov. 25, 1909. (Original No. 7275.)

Characters.—Allied to *Mungos albicaudus ibeanus* most closely, but coloration much lighter, being blackish only on median dorsal region, and size somewhat larger, almost equalling *Mungos albicaudus grandis* of South Africa; color as light as *Mungos albicaudus leucurus* of the Nile Valley, but size much larger, with third lower molar very much larger.

Coloration.—Ground color buff, the median dorsal region blackish, due to the presence of long black tipped hairs; sides grizzled by longer annulated black and white hairs; the dense underfur everywhere buffy; feet blackish (dark seal-brown), the dark color covering forearm and extending on thighs as a streak to hips; tail white, the tip only pure white, the basal half having the hairs annulated with a broad subterminal band of black; underparts buffy, scantily varie-

gated by longer annulated hairs; head more grayish, the hair covering chiefly annulated black and white; muzzle and chin with black hair chiefly; back of ears black.

Measurements.—Head and body, 560; tail, 440; hindfoot, 125; ear, 20. Skull, condylo-basal length, 110; zygomatic breadth, 525; post-orbital constriction, 22; width of palate across PM^1 , 35; length of upper tooth row to front of canine, 44.5; condylo-incisive length of mandible, 79; height at coronoid, 24; length of last lower molar, 7.8; breadth of last lower molar, 5.

Teeth much worn in type, the cusps of the molars worn down to the general tooth level, so that the cusp formulae cannot be determined. Skin tanned and preserved in a flat condition. A series of skins of *ibeanus* from the vicinity of the type locality are blackish, the underfur showing only on sides and where it is grayish and not buffy. The white-tailed *mungos* inhabiting the coast district of East Africa is a light colored race like *leucurus* of the north with the large bodily size of the southern race, *grandis*. The last lower molar exceeds in width that of *grandis* by three millimeters, but the skull is almost the exact size of the type of the southern race.

BDEOGALE CRASSICAUDA OMNIVORA, new subspecies

Northern Four-toed Mongoose

Type from Mazeras, British East Africa; adult female, Cat. No. 182275, U. S. Nat. Mus.; collected by Edmund Heller, Dec. 21, 1911. (Original No. 2588.)

Characters.—Resembling *Bdeogale crassicauda crassicauda* in size and proportions, but color of tail and feet darker, black rather than seal-brown; body color lighter owing to the scantiness of black tipped hairs which allows the buffy underfur to predominate, giving the coat a grizzled effect. This race differs decidedly from *tenuia* of Zanzibar, which is a short tailed species with a uniform brown body coloration and smaller body size.

Measurements of the type in the flesh.—Head and body, 420; tail, 245; hindfoot, 81; ear, 34. Skull fully adult, all the sutures being obliterated, but the cheek teeth have prominent unworn tubercles or cusps. Condyllo-basal length, 85; basal length, 80; zygomatic breadth, 46; mastoid breadth, 33; interorbital width, 18; post orbital constriction, 14; palatal length, 50; width across PM^1 , 28; length of upper tooth row, 40; width of M^1 , 7.

Besides the type there is another adult female in the collection from Mazeras. This specimen is slightly larger with more worn

teeth than the type and agrees with it in coloration. A newly-born young is in the collection also. This specimen is quite different from the adults, being uniform seal-brown everywhere without any of the buffy grizzle of the adult except on the forehead. The type has been compared with specimens in the British Museum and with measurements and notes made from the types of *crassicauda* and *puisa* in the Berlin Museum.

The body coloration resembles closely that of the white-tailed mongoose in its grizzling and also in the buff color of the underfur. Stomach contents of the type, beetles and the remains of a mouse.

ICTONYX CAPENSIS ALBESCENS, new subspecies

Ibean Zorilla

Type from the summit of Mount Lololokwi, northern Guaso Nyiro district, British East Africa; adult male, Cat. No. 182724, U. S. Nat. Mus.; collected by Edmund Heller, Sept. 15, 1911. (Original No. 4318.)

Characters.—Most closely allied to *Ictonyx capensis intermedia* of the Upper Nile in coloration but distinguishable by the more extensive white areas of the head and body, the white face markings coalescing and forming a broad band across the face or forehead; white of back very extensive, the black areas on nape and shoulders reduced to narrow lines. From *shoae* of the Abyssinian highlands *albescens* may be distinguished by the absence of a black bar on the forehead separating the frontal and post orbital white areas, and by the more extensive white areas of the back and tail; not distinguishable however in size. This race exceeds the typical race *capensis* somewhat in size and is easily separable from it by the great reduction of the black areas in its coloration.

Measurements in the flesh.—Head and body, 340; tail, 275; hind-foot, 58; ear, 27. Skull aged, all the sutures having coalesced and the sagittal and lambdoidal crests well developed; the upper molar shows much wear and the canines are short and blunt.

Measurements.—Condylo-basal length, 67; basal length, 62; greatest breadth, 42; interorbital breadth, 18; post orbital constriction, 15; mastoid breadth, 35; palatal length, 32.5; upper tooth row, 25; length of PM⁴ on outer edge, 7.2.

The type is the only specimen from Mount Lololokwi, but there are three others from Nairobi which agree with it in coloration. The types in the British Museum have been compared as well as the extensive series of specimens in that institution with the type of *albescens*.

FELIS OCREATA NANDAE, new subspecies

Nandi Wild Cat

Type from the headwaters of the Lukosa River, Nandi escarpment, altitude 7,000 feet, British East Africa; adult male, Cat. No. 182367, U. S. Nat. Mus.; collected by Edmund Heller, Feb. 9, 1912. (Original No. 2688.)

Characters.—Coloration very dark and at once distinguishable from the other East African races, all of which are light colored. Median dorsal color blackish, vermiculated sparingly with tawny, sides crossed by distinct dark bands; underparts rich ochraceous spotted with black; upper surface of feet and legs ochraceous like the belly. Ears much darker than in the other races, blackish throughout, with a very slight tawny suffusion.

Measurements of the type in the flesh.—Head and body, 530; tail, 410; hindfoot, 140; ear, 63. Skull adult, but sutures still distinct and teeth unworn. Greatest length, 101; basal length, 87; condylo-basal length, 94; zygomatic breadth, 69; interorbital breadth, 20; post orbital constriction, 35; breadth of brain case, 47; palatal length, 39; width of mesopterygoid fossa, 14; length of upper carnasial on outer edge, 10; nasals, 27 x 14.

Besides the type there are three other specimens in the National Museum which were collected at the base of the Nandi escarpment on the lower edge of the Kakumega forest. These are somewhat lighter than the type, but they agree with it in being distinctly darker than *ugandae*. This race in its dark color is almost equalled by the type of *rubida* from Mombuttu in the Congo watershed. This type has been examined at the British Museum and is considerably darker than average specimens from Mombuttu in the same collection, and actually represents a much lighter race than *nandae*.

FELIS OCREATA TAITAE, new subspecies

Desert Wild Cat

Type from Voi, British East Africa; adult female, Cat. No. 182220, U. S. Nat. Mus.; collected by Edmund Heller, Oct. 27, 1911. (Original No. 2533.)

Characters.—A light colored race resembling closely typical *Felis ocreata* of Abyssinia, but differing by having the breast marked by distinct spots, the darkest of which are fuscous; ears very light in color, the backs fulvous without darker tips. From *Felis ocreata ugandae* this race differs by its decidedly lighter coloration and smaller body size.

The type measured in the flesh.—Head and body, 495; tail, 310; hindfoot, 118; ear, 58. Skull adult, the basisphenoid sutures obliterated. Greatest length, 87; basal length, 74; condylo-basal length, 80; zygomatic breadth, 63; interorbital breadth, 17; post orbital constriction, 33; breadth of brain case, 43; palatal length, 33; width of mesopterygoid fossa, 11; nasals, 25 x 11.

Besides the type there is another adult female in the National Museum from the Northern Guaso Nyiro River near its junction with the Isiola. The tip of the tail in the type is now missing, but that of the other specimen which agrees in body coloration minutely with the type has the terminal portion of the tail banded with black to the same extent as in typical *ocreata*.

Specimens representing *ocreata* from Abyssinia in the British Museum have the breast unspotted and the underparts lighter buff, but the color of the dorsal surface and the underfur is quite the same as in *taitae*.